Skin Cancer

To use a hackneyed phrase, “it doesn’t take a rocket scientist” to see the effect of too much sun exposure. Visiting various NASA sites, I have experienced the intense effects of the sun. When I am outdoors, I wear a hat. The reason is simple: exposure to the sun can increase your risk of skin cancer.

Risk reduction is fairly simple, but to get the word out I am launching NASA’s skin cancer prevention program as one more health facet in the overall Agency Safety Initiative (ASI). The program focuses on reducing risks, early detection, and health education about skin cancer

Skin cancer is the most common type of cancer and is responsible for one-half of all new cancers. Approximately one million cases of skin cancer will be diagnosed in the U.S. this year alone. About 38,000 people in the United States will develop malignant melanoma annually, and one in five of those that develop this disease will not survive. People in the U.S. die of skin cancer every day, yet these cancers are the most easily detectable, curable and preventable of all cancer types.

Since the majority of NASA sites are located in the Sunbelt, our employees have an increased risk of excessive and prolonged sun exposure. There are also additional personal risk factors such as fair complexion, history of a blistering sunburn in childhood, family history of skin cancer and presence of large numbers of skin moles that increase the likelihood of developing skin cancer. Measures such as limiting outdoor activities during peak solar exposure hours, wearing protective clothing and using sun blocking agents are all very effective in reducing sun exposure.

Minimizing the occupational and personal risk factors for developing skin cancer is a priority in protecting the health of the NASA workforce. Providing health education and skin cancer screening and reducing exposure to the sun can help us avoid these troublesome and often deadly diseases.

NASA Actions

Principal Center

- Discuss need for skin cancer prevention program and actions with Medical Directors--completed
- Develop Solar Safe plan--completed
- Support all Centers on initial efforts—in progress
- Implement recommendation for total body screening every 3 years before age of 40 and annually over age of 40—in progress
- Adopt plans for enhancing outdoor shading availability and flexible hours for outdoor fitness activities--TBD

NASA Centers

- Offer skin cancer screenings to the NASA workforce through Center clinics
- Offer health education to the NASA workforce utilizing a variety of media sources
- Provide protective methods to reduce risk of sun exposure
- Utilize administrative controls to reduce the amount of sun exposure, such as avoiding outside activity between 11:00 AM and 1:00 PM
- Collaborate with the American Cancer Society, the American Academy of Dermatology and the Melanoma Research Foundation to maximize educational efforts for the NASA workforce.

Background

Skin cancer is the most common type of all cancers and is responsible for one-half of all new cancers. Approximately 1,000,000 new cases of skin cancer will be diagnosed in the U. S. this year. Skin cancer is the most easily detectable, curable and preventable of all cancer types. Between 0.7 and 2.2 cases per 100,000 people will develop malignant melanoma, and one in five affected will die. Every hour, one person in the U. S. dies of this form of cancer.

The major risk factor in the development of skin cancer is overexposure to the sun. Centers, especially those in the Sun Belt, need to explore whether work must be accomplished around the peak sun exposure time. Between 20 to 30% of our daily exposure occurs between 11 AM and 1 PM. I'm requesting that work outside, between 11 AM and 1 PM be rescheduled or reduced whenever possible. If work cannot be rescheduled or reduced, those employees should cover up with light colored clothing, wear a hat and sunglasses. They should apply sunscreen (with a SPF of 15 or higher) thirty minutes before Sun exposure and reapply every two hours. These simple steps to avoid overexposure should be used even on cloudy days and wherever possible, provide shade..

Skin cancer is a disease caused by the abnormal growth of cells. Cells that make up the skin usually divide and reproduce in an orderly manner replacing worn-out tissue and repairing injuries. When cells get out of control and divide more than they normally should, they form skin cancers.

Two types of ultraviolet radiation (UVB and UVA) can start cancer and promote its growth. UVB affect the production of melanin that helps protect our skin. UVB rays make our skin tan, but are also responsible for causing skin cancer. Unlike UVB, skin damage caused by UVA rays may not show for years. UVA rays also contribute to wrinkles and loss of skin firmness.

Individuals have an increased likelihood of developing melanoma if they have had one or more blistering sunburns during childhood; have a family history of skin cancer; or have more than 50 moles, five large moles or were born with moles. An additional personal risk factor that increases the likelihood of developing skin cancer includes having a fair complexion. We have no control over personal risk factors, but we do have control of our exposure to the sun.

The most common types of skin cancer are basal cell, squamous cell and melanoma. The first two appear primarily on skin surfaces exposed to the sun. Basal cell cancer accounts for 80% of all skin cancers. It is a slow growing cancer and does not usually spread to distant parts of the body. However, left untreated it can spread to nearby areas and invade the bone and other tissues beneath the skin. Squamous cell cancers account for 16% of all skin cancers. This is a more aggressive skin cancer and is more likely to spread to distant parts of the body and to invade structures beneath the skin. A less common

type of skin cancer is melanoma. Melanoma is by far the most dangerous type of skin cancer. Melanoma accounts for only 4% of skin cancers, but about 85% of the deaths. Melanoma is much more likely to spread to other parts of the body. However, if detected in its early stages it is very curable. Unfortunately, family history and personal risk factors play a major role and only 20% of melanomas occur on exposed skin surfaces. However, even these odds can be reduced by a regular and thorough screening program.